

5 transducer and the component of a human ear are elastically coupled by the connecting
6 member;

7 wherein said connecting member comprises a resilient biasing mechanism
8 having a resonant frequency below about 500 hertz.

Please cancel claims 2 and 3.

1 ~~3.4.~~ (Amended) An implantable hearing device, which is coupled between a
2 tympanic membrane and an oval window of an ear of a human subject, comprising:

3 an amplifier;

4 a first transducer electrically coupled to said amplifier for converting
5 mechanical vibrations to electrical signals;

6 a second transducer electrically coupled to said amplifier for converting
7 electrical signals to mechanical vibrations;

8 a first connecting member having a first end connected to the first transducer
9 and a second end adapted to connect [connected] to the tympanic membrane, wherein said first
10 transducer and said tympanic membrane are elastically coupled by said first connecting
11 member; and

12 a second connecting member having a first end connected to said second
13 transducer and a second end adapted to connect [connected] to said oval window, wherein said
14 second transducer and said oval window are elastically coupled by said second connecting
15 member;

16 wherein said first and second connecting members each comprise a resilient
17 biasing mechanism having a resonant frequency below about 500 hertz.

1 5. (As filed) The apparatus of claim 4, wherein said first connecting member creates a
2 tensile force between the tympanic membrane to said first transducer when coupled therebetween.

1 6. (As filed) The apparatus of claim 4, wherein said second connecting member creates a
2 tensile force between said second transducer to the oval window when coupled therebetween.

Please cancel claims 7-9.

A3
16. (Amended) An implantable hearing device adapted to connect
2 [connectable] to a component of an ear of a human subject, comprising:
3 a hearing device for improving hearing of the human subject; and
4 a resilient biasing mechanism [means] for elastically coupling said hearing
5 device to the component of the ear, said resilient biasing mechanism having a resonant
6 frequency below about 500 hertz.

17. (Amended) The apparatus of claim 16, wherein said resilient biasing
2 mechanism [means] for elastically coupling creates a tensive force between said implantable
3 hearing device and the component of the ear.

A4
Please cancel claims 12 and 13.

18. (Amended) A method of improving hearing in a human subject
2 comprising:
3 implanting an implantable hearing device into a mastoid bone of the human
4 subject; and
5 elastically coupling said implantable hearing device to a vibratory component of
6 the ear using a connecting member, said connecting member comprising a resilient biasing
7 mechanism having a resonant frequency below about 500 hertz.

A4
19. (Amended) A method of improving hearing in a human subject, an ear
2 of the human subject having a tympanic membrane and an oval window, comprising:
3 implanting an implantable hearing device in a mastoid bone of the human
4 subject, said implantable hearing device comprising
5 (a) an amplifier,
6 (b) a first transducer electrically coupled to said amplifier, and
7 (c) a second transducer electrically coupled to said amplifier;
8 elastically coupling the tympanic membrane and said first transducer using a
9 first compliant connecting member; and

29

10 elastically coupling said second transducer and the oval window using a second
11 compliant connecting member;

12 wherein said first and second connecting members each comprise a resilient
13 biasing mechanism having a resonant frequency below about 500 hertz.

A4
Please cancel claims 16-19.

1 10. (Amended) In an implantable hearing device of the type coupled to a
2 component of an ear of a human subject, the improvement comprising:

3 a connecting member adapted to elastically couple the implantable hearing
4 device to the component of the ear, said connecting member comprising a resilient biasing
5 mechanism having a resonant frequency below about 500 hertz.

A5
1 11. (Amended) In an implantable hearing device adapted to be coupled
2 between a tympanic membrane and an oval window of an ear of a human subject and having
3 an amplifier, a first transducer electrically coupled to the amplifier, and a second transducer
4 electrically coupled to the amplifier, the improvement comprising:

5 a first connecting member adapted to elastically couple the tympanic membrane
6 to said first transducer; and

7 a second connecting member adapted to elastically couple said second
8 transducer to the oval window;

9 wherein said first and second connecting members each comprise a resilient
10 biasing mechanism having a resonant frequency below about 500 hertz.

1 22. (As filed) In an implantable hearing device adapted to being coupled to a component
2 of the middle ear of a human subject, comprising an electromagnetic unit having a diaphragm, the improvement
3 comprising:

4 a connecting member adapted to elastically couple a component of the middle ear to said
5 diaphragm.

N.E.
1 23. (As filed) The improved hearing device of claim 22, wherein the connecting member
2 is adapted to be coupled to the diaphragm and the structure of the middle ear using magnetism.

1 24. (As filed) The improved hearing device of claim 22, wherein the implantable device is
2 hermetically sealed.

1 25. (As filed) An implantable hearing device of the type coupled to one or more ossicles
2 of an inner ear of a human subject, comprising:

3 a housing;
4 an electromagnetic unit having a magnet disposed inside said housing and a coil surrounding a
5 portion of said housing;
6 a diaphragm mechanically coupled to said electromagnetic unit, wherein motion of the
7 diaphragm is proportional to a signal applied to said electromagnetic unit; and
8 a connecting member adapted to elastically couple said diaphragm to the one or more ossicles of
9 the human ear.

1 26. (As filed) The improved hearing device of claim 25, wherein the implantable hearing
2 device is hermetically sealed.

1 27. (As filed) A method of improving hearing in a human subject, an ear of the human
2 subject having a middle ear structure, comprising:

3 implanting an implantable hearing device in a mastoid bone of the human subject, said
4 implantable hearing device comprising:
5 an electromagnetic unit having a diaphragm
6 mechanically driven by said electromagnetic unit; and
7 elastically coupling said diaphragm and a component of the middle ear structure using a first
8 connecting member.

1 28. (As filed) The method of claim 27, wherein the implantable hearing device is
2 hermetically sealed.

Please cancel claims 29 and 30.

1 31. (As filed) An implantable hearing device adapted to being coupled to one or more
2 ossicles of an inner ear of a human subject, comprising:
3 a coil;
4 a compliant connecting member adapted to elastically couple said coil to a magnet, the magnet
5 being coupled to the one or more ossicles of the human ear.

1 32. (As filed) The hearing device of claim 31, wherein the compliant connecting member
2 comprises a keeper/spring device.

1 33. (As filed) A method of improving hearing in a human subject, an ear of the human
2 subject having a middle ear structure, comprising:

3 implanting a magnet on a component of the middle ear structure;
4 elastically coupling the magnet to a first portion of a connecting member; and
5 elastically coupling a coil device to a second portion of said connecting member.

1 34. (As filed) The method of claim 33, wherein the connecting member comprises a
2 keeper/spring device.

Please add new claims 35-39.

1 -- 2. 35. The apparatus of claim 1, wherein said resilient biasing mechanism has a
2 resonant frequency below about 200 hertz.

3 23. 36. An implantable hearing device comprising:
4 a transducer which produces vibrations in response to an electrical signal; and
5 a connecting member having a first end connected to the transducer and a
6 second end adapted to connect to a component of a human ear, wherein the transducer and the
7 component of a human ear are elastically coupled by the connecting member;

8 wherein said connecting member comprises a urethane strip.

1 24. 37. An implantable hearing device, which is coupled between a tympanic
2 membrane and an oval window of an ear of a human subject, comprising:

3 an amplifier;
4 a first transducer electrically coupled to said amplifier for converting
5 mechanical vibrations to electrical signals;
6 a second transducer electrically coupled to said amplifier for converting
7 electrical signals to mechanical vibrations;

8 a first connecting member having a first end connected to the first transducer
9 and a second end adapted to connect to the tympanic membrane, wherein said first transducer
10 and said tympanic membrane are elastically coupled by said first connecting member; and

11 a second connecting member having a first end connected to said second
12 transducer and a second end adapted to connect to said oval window, wherein said second
13 transducer and said oval window are elastically coupled by said second connecting member;
14 wherein said first and said second connecting members each comprise a
15 urethane strip.

25.

1 38. An implantable hearing device, which is coupled between a tympanic
2 membrane and an oval window of an ear of a human subject, comprising:
3 an amplifier;
4 a first transducer electrically coupled to said amplifier for converting
5 mechanical vibrations to electrical signals;
6 a second transducer electrically coupled to said amplifier for converting
7 electrical signals to mechanical vibrations;

8 a first connecting member having a first end connected to the first transducer
9 and a second end adapted to connect to the tympanic membrane, wherein said first transducer
10 and said tympanic membrane are elastically coupled by said first connecting member; and
11 a second connecting member having a first end connected to said second
12 transducer and a second end adapted to connect to said oval window, wherein said second
13 transducer and said oval window are elastically coupled by said second connecting member;
14 wherein said first and said second connecting members each comprise at least
15 one set of angled bends.

26.

1 39. An implantable hearing device adapted to connect to a component of an
2 ear of a human subject, comprising:
3 a hearing device for improving hearing of the human subject; and
4 means for elastically coupling said hearing device to the component of the ear;
5 wherein said means comprises a urethane strip.--

REMARKS

Claims 1-15, 20-28, and 31-34 were examined. Claims 1, 4, 10, 11, 14, 15, 20, and 21 have been amended to more clearly claim the invention. Claims 16-19, 29, and 30 have been canceled without prejudice against pursuing patent protection for these inventions in